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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/627,853 | 07/25/2003 | Stephen Paul Fenton | V2002009 | 2653 |

7590 06/08/2005

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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT PAPER NUMBER

3672

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,853

Applicant(s)

FENTON ET AL.

Examiner

Jennifer H Gay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12 and 14-21 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/3/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "17" and "21" have both been used to designate a first string of casing. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because in Figure 3 it appears that element 25 is indicating the wrong feature. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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Claim Objections

3. Claims 16 and 18 are objected to because of the following informalities: in line 1 of claim 16 "The subsea well assembly" should be changed to --The subsea wellhead assembly-- and in line 1 of claim 18 "The subsea wellhead assembly" should be changed to --The tubing hanger assembly--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use, or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Raulins et al. (US 3.087,547).

Regarding claim 1: Raulins et al. discloses a subsea wellhead assembly that includes the following features:

- A tubular wellhead member **20**.
- A production port **22** extending through a side of the wellhead member for transmitting production fluid from the subsea well.
- A tubing hanger **72b**, having a string of tubing **120b** extending to a production depth within the subsea well, that lands in a bore of the wellhead member and has an inner bore in fluid communication with the string of tubing. (Figure 2)
- At least one hanger port **122a** extending through a side of the tubing hanger for transmitting the production fluid from the bore of the tubing hanger to the production port.

- A diverter **72a** positioned adjacent the tubing hanger for diverting the flow of production fluid from the hanger port around a portion of the tubing hanger to the production port.

Regarding claim 2: The at least one hanger port comprises a plurality of hanger ports **121a**, **122a**.

Regarding claim 3: The hanger port extends through a portion of the tubing hanger at an axial position substantially the same as the production port.

Regarding claim 4: The diverter has a tubular cross-section and surrounds a portion of the outer surface of the tubing hanger.

Regarding claim 7: The assembly further includes a tubing annulus passage **133b** extending axially through the tubing hanger.

6. Claims 8-12 and 14-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Wong et al. (US 6,557,629).

Regarding claim 8: Wong et al. discloses a wellhead assembly that includes the following features:

- A tubular wellhead member **42**.
- A production port **92** (the examiner notes that element 92 is defined as an injection port but would be capable of functioning as a production port) extending through a side of the wellhead member for transmitting production fluid from the subsea well.
- A tubing hanger **44**, having a string of tubing **38** extending to a production depth within the subsea well, that lands in a bore of the wellhead member and has an inner bore in fluid communication with the string of tubing.
- At least one hanger port **114** extending through a side of the tubing hanger for transmitting production fluid from the bore of the tubing hanger to the production port.
- A diverter **98** positioned adjacent the hanger port for diverting the flow of production fluid from the hanger port.

- At least one diverter port 102 spaced circumferentially from the hanger port for transmitting the production fluid from the hanger port to an outer surface of the diverter, the diverter port being spaced radially outward from the hanger port and radially inward from the production port.

Regarding claims 9, 18: The at least one hanger port comprises a plurality of hanger ports (Figure 4).

Regarding claim 10: The hanger port extends through a portion of the tubing hanger at an axial position substantially the same as the production port.

Regarding claim 11: The diverter has a tubular cross-section and surrounds a portion of the outer surface of the tubing hanger, and wherein the wellhead assembly further comprises upper 108 and lower 106 seals between the diverter and the wellhead member above and below the diverter port.

Regarding claim 12: The at least one diverter port comprises a plurality of diverter ports.

Regarding claim 14: The hanger port defines a hanger port cross-sectional area, and the bore of the tubing hanger defines a tubing hanger cross-sectional area, and wherein the hanger port cross-sectional area is greater than the tubing hanger cross-sectional area so that a velocity of the production fluid decreases while passing through hanger port. (Figure 4)

Regarding claim 15: The hanger port defines a hanger port cross-sectional area, and the diverter port defines a diverter cross-sectional area, and therein the diverter cross-sectional area is greater than the hanger port cross-sectional area so that a velocity of the production fluid decreases while passing through diverter port. (Figure 4)

Regarding claim 16: The well assembly further includes an annular recess on an outer diameter of the tubing hanger, the hanger port being located in the recess; and an annular recess in the bore of the wellhead member, the production port being located in the annular recess of the wellhead member.

Regarding claim 17: Wong et al. discloses a tubing hanger assembly that includes the following features:

- A tubing hanger member 44 adapted to land in a bore of a wellhead member of a subsea well and adapted to have a string of tubing 38 extend to a production depth within the subsea well.
- At least one hanger port 114 extending through a side of the tubing hanger member for transmitting production fluid from a bore of the tubing hanger member to an outer surface of the tubing hanger member.
- A diverter cage 98 positioned around the tubing hanger at the hanger port, the diverter cage having an inner diameter greater than an outer diameter of the tubing hanger at the hanger port, defining an annular chamber (Figure 4), causing well fluid to flow into the annular chamber.
- At least one diverter port 102 spaced circumferentially from the hanger port for transmitting the production fluid from the annular chamber to an outer surface of the diverter.

Regarding claim 19: Wong et al. discloses a method for conveying production fluid from a subsea well that involves the following steps:

- Landing a tubing hanger member 44, with a string of tubing 38 extending therefrom, within a bore of a wellhead member 42 of a subsea wellhead, and providing the tubing hanger member with a hanger port 114 extending through its side and with a diverter 98 located adjacent the port and surrounding a portion of the outer surface of the tubing hanger member, the diverter having a diverter port 102 spaced circumferentially from the hanger port.
- Transmitting a production fluid from the subsea well from the bore of the tubing hanger member through the hanger port to the outer surface of the tubing hanger member.
- With the diverter, diverting the production fluid around the portion of the outer surface of the tubing hanger member.

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- Transmitting the production fluid through the diverter port to the interior surface of the wellhead member for conveyance from the wellhead member.

Regarding claim 20: The method further involves reducing a velocity of the production fluid while transmitting the production fluid out the tubing hanger port of the tubing hanger member.

Regarding claim 21: The method further involves reducing a velocity of the production fluid while transmitting the production fluid through the diverter port to the interior surface of the wellhead member.

Allowable Subject Matter

7. Claims 5, 6, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

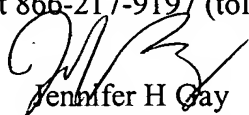
The remaining references made of record disclose various wellhead assemblies.

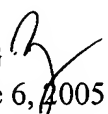
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (571) 272-7029. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jennifer H. Gay
Patent Examiner
Art Unit 3672

JHG 
June 6, 2005